

LOGIC CIRCUIT DEVICES

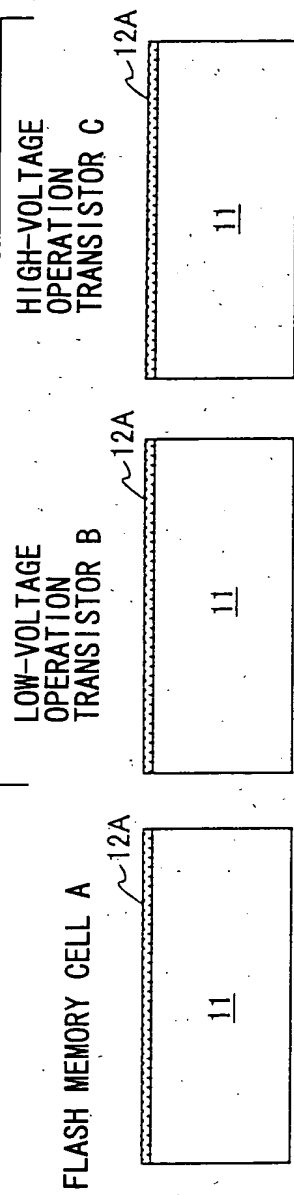


FIG. 1A
PRIOR ART

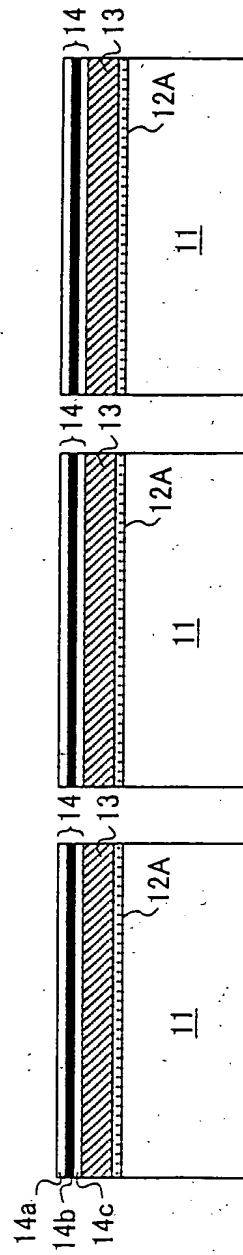


FIG. 1B
PRIOR ART

LOGIC CIRCUIT DEVICES

FLASH MEMORY CELL A

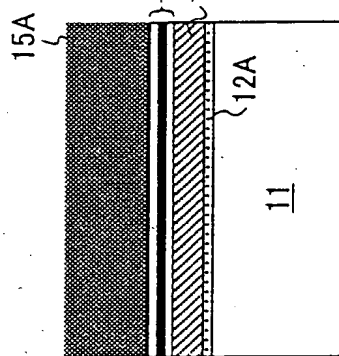
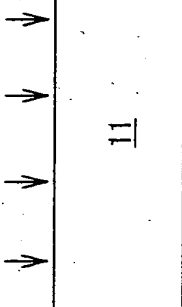


FIG. 1C
PRIOR ART

LOW-VOLTAGE
OPERATION
TRANSISTOR B

HF



HF

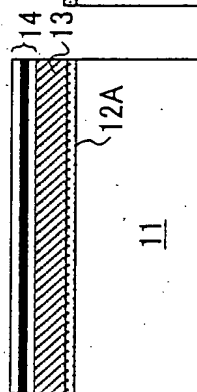
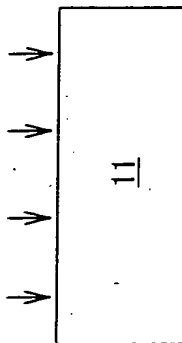
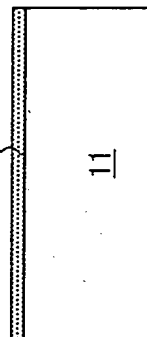
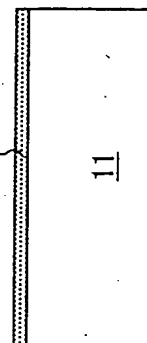


FIG. 1D
PRIOR ART

12C



12C



LOGIC CIRCUIT DEVICES

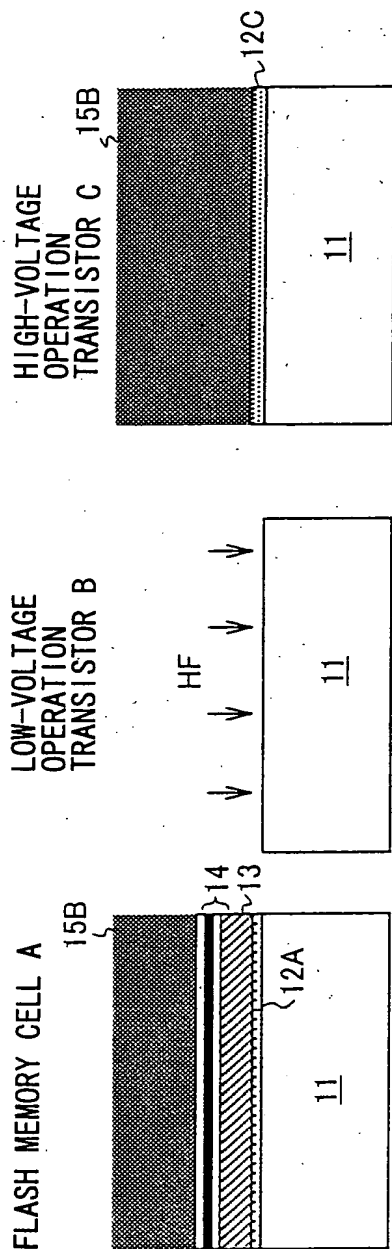


FIG. 1E
PRIOR ART

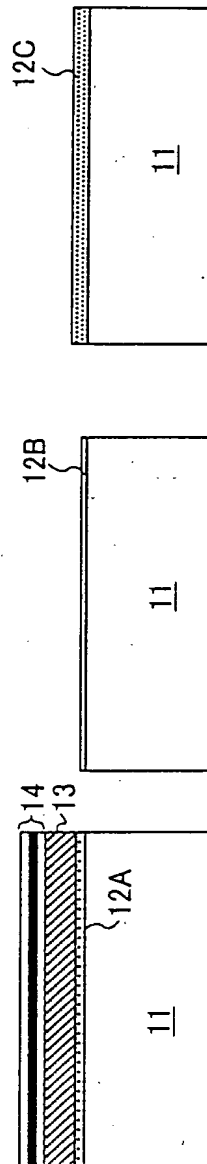


FIG. 1F
PRIOR ART

FIG. 1G
PRIOR ART

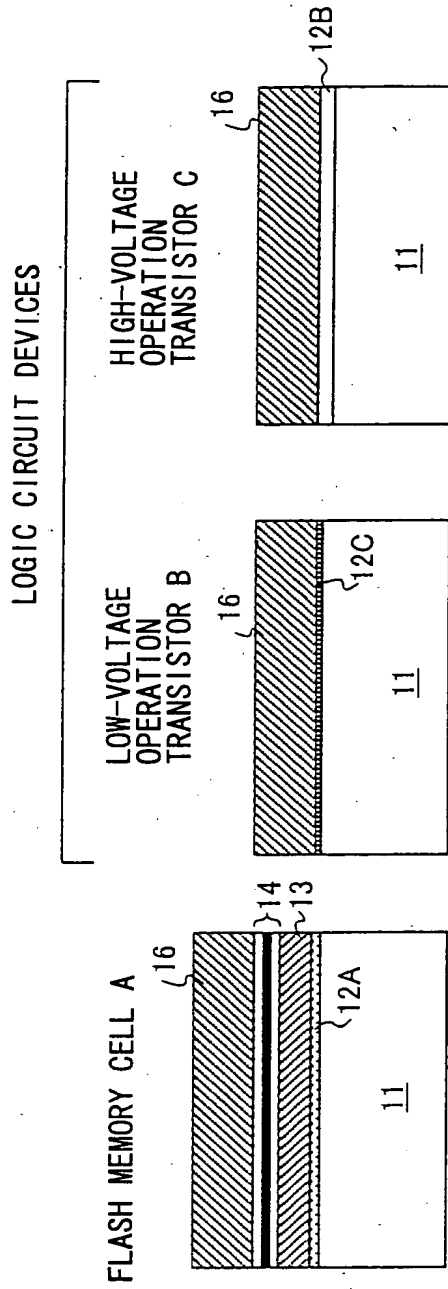


FIG. 1H
PRIOR ART

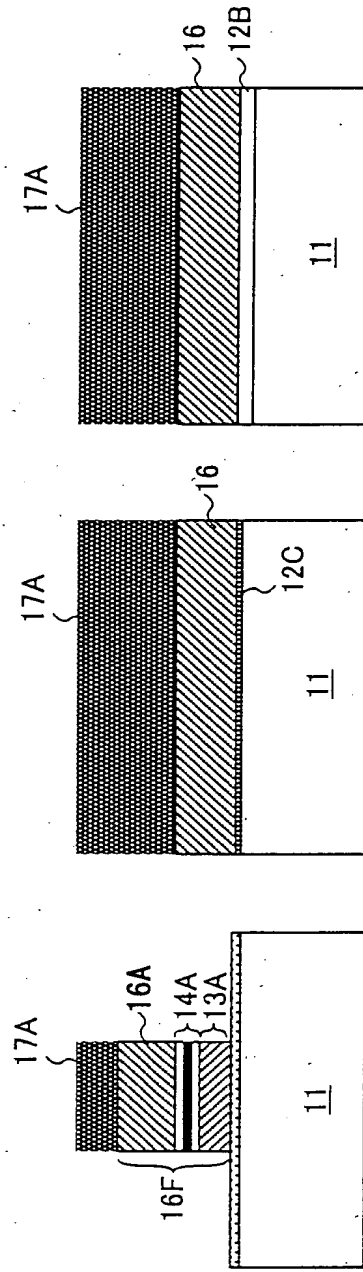
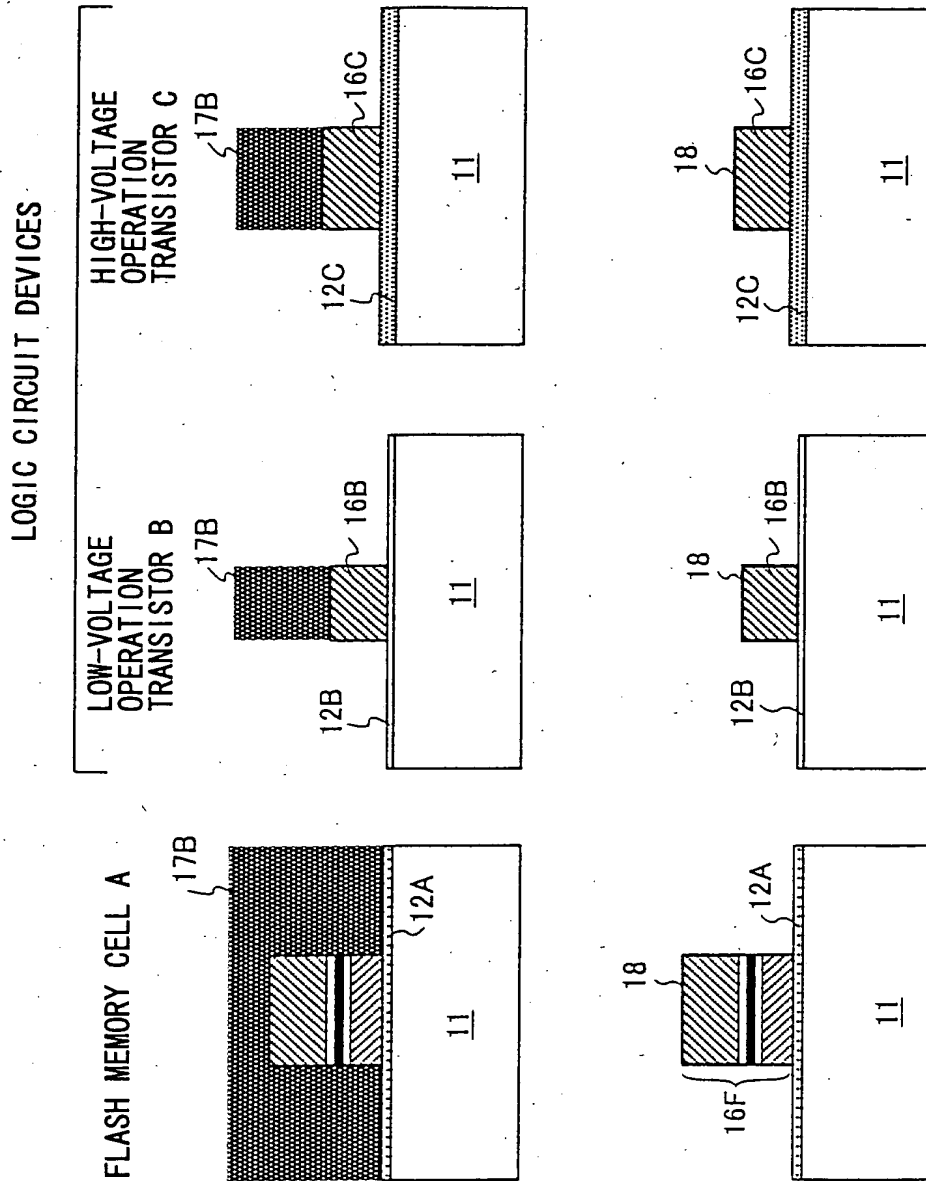


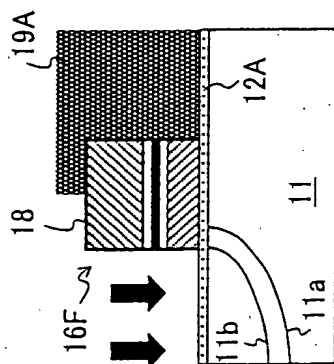
FIG. 1I
PRIOR ART



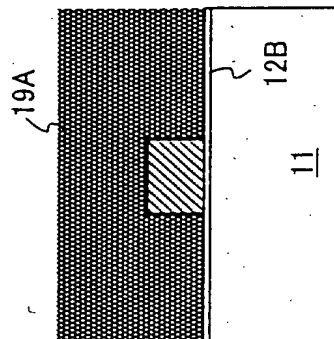
LOGIC CIRCUIT DEVICES

FLASH MEMORY CELL A

P+ OR As+



LOW-VOLTAGE OPERATION TRANSISTOR B



HIGH-VOLTAGE OPERATION TRANSISTOR C

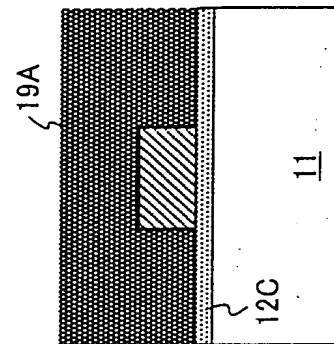
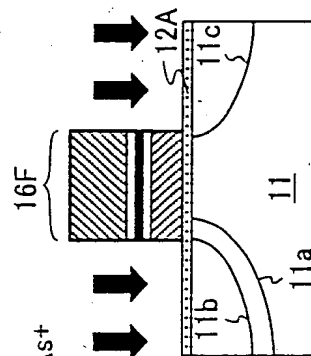


FIG. 1K
PRIOR ART

As+



19B

19B

FIG. 1L
PRIOR ART

FIG. 1M
PRIOR ART

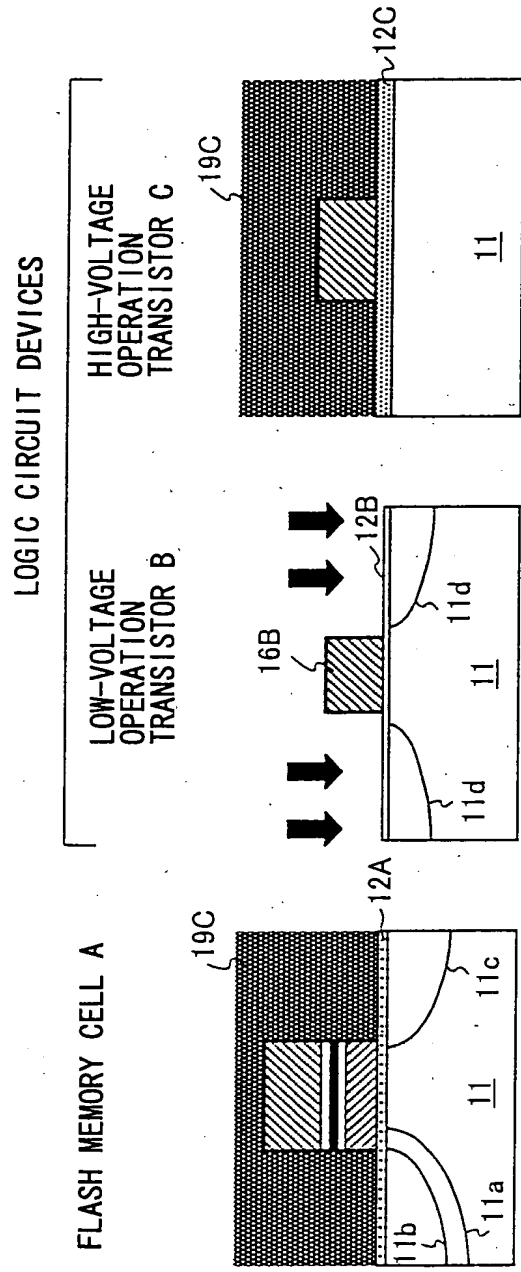
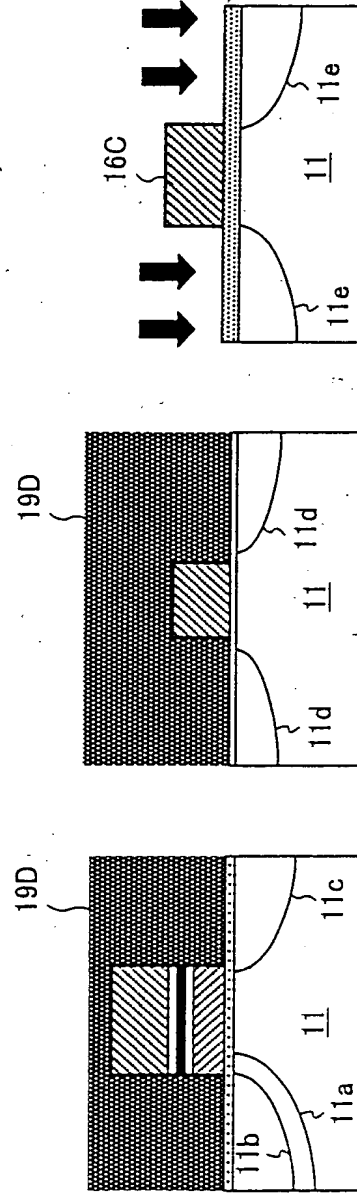
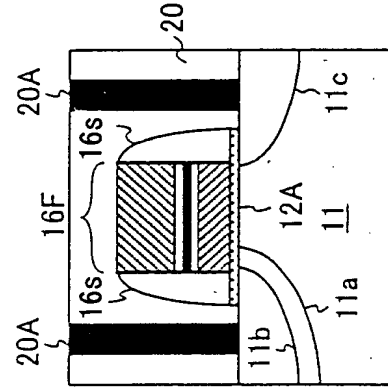


FIG. 1N
PRIOR ART

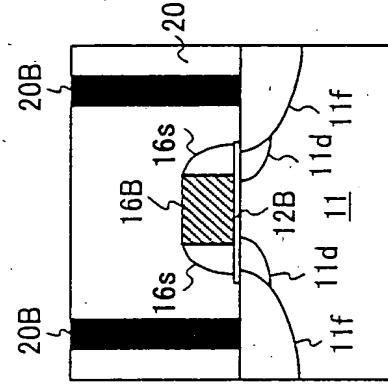


LOGIC CIRCUIT DEVICES

FLASH MEMORY CELL A



LOW-VOLTAGE OPERATION TRANSISTOR B



HIGH-VOLTAGE OPERATION TRANSISTOR C

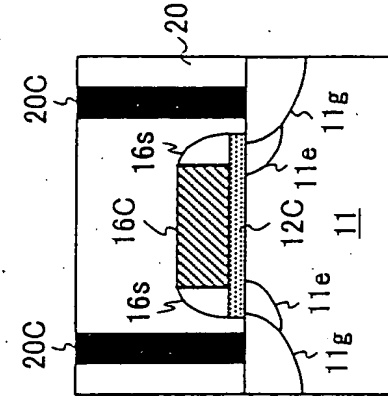


FIG. 1Q
PRIOR ART

FLASH MEMORY CELL

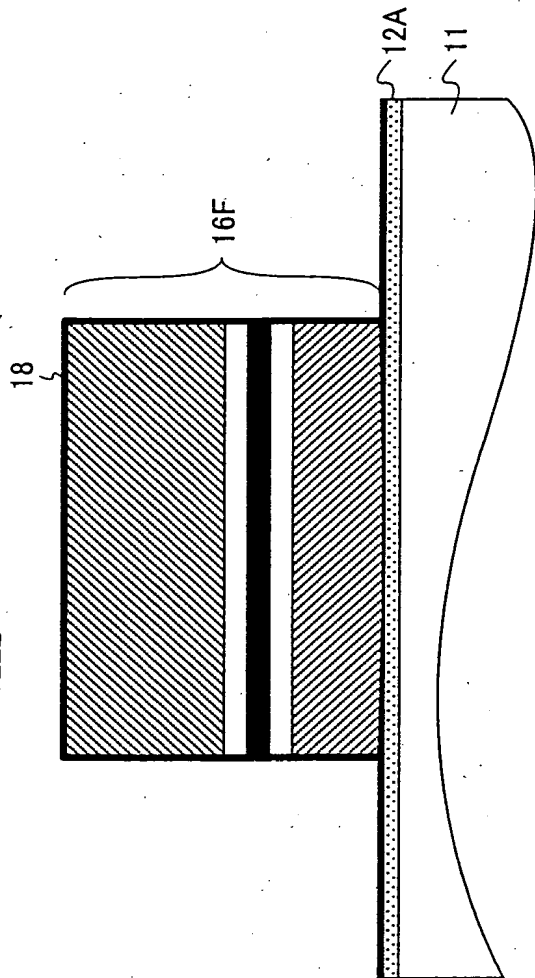


FIG. 2A
PRIOR ART

LOW-VOLTAGE OPERATION TRANSISTOR

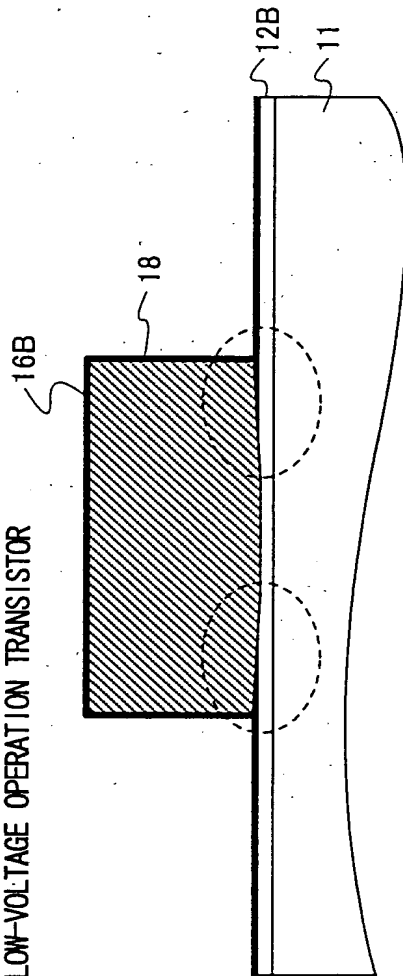


FIG. 2B
PRIOR ART

FIG. 3A
PRIOR ART

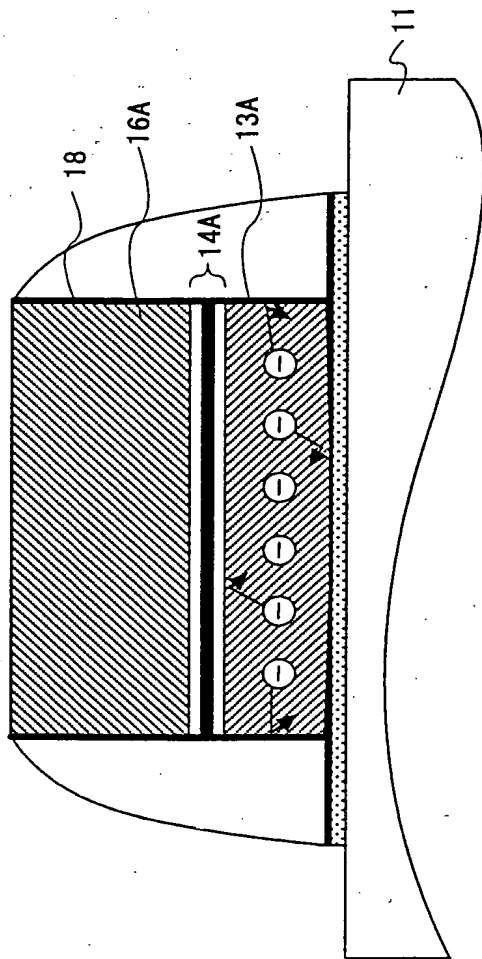


FIG. 3B
PRIOR ART

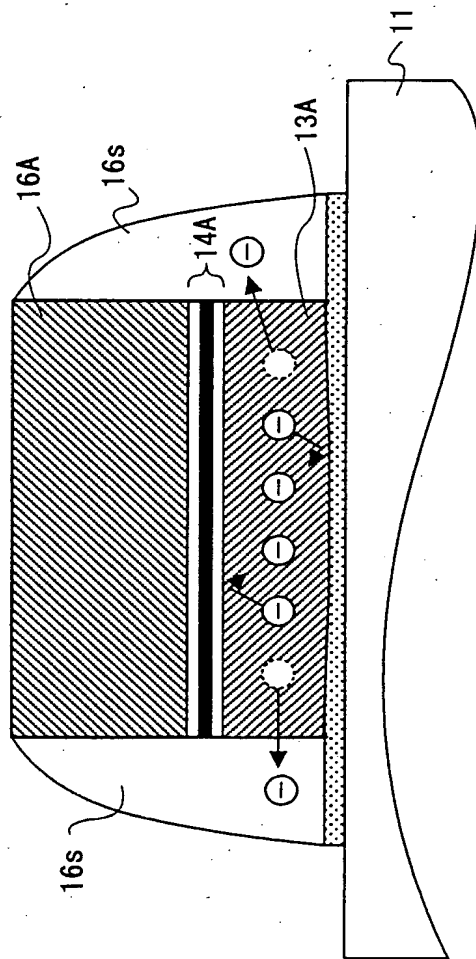
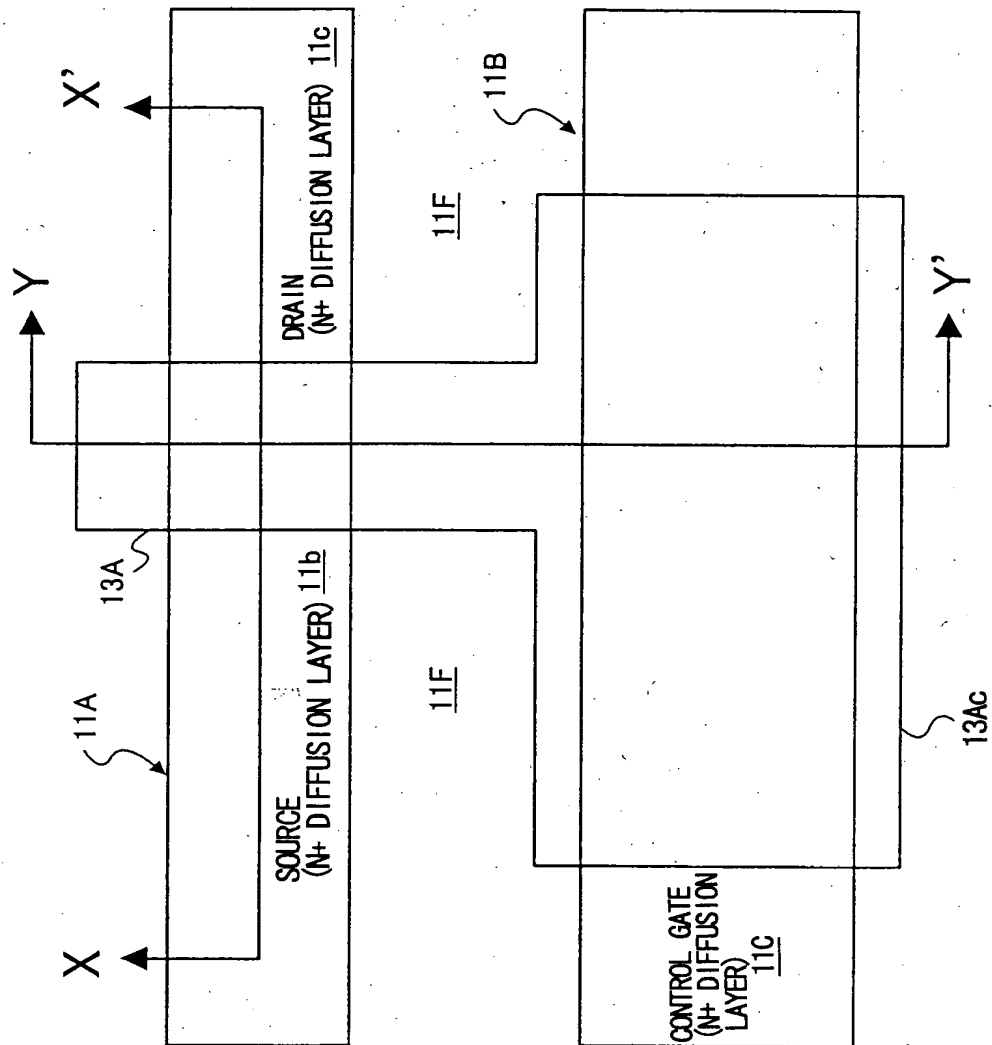


FIG. 4 RELATED ART



X-X'

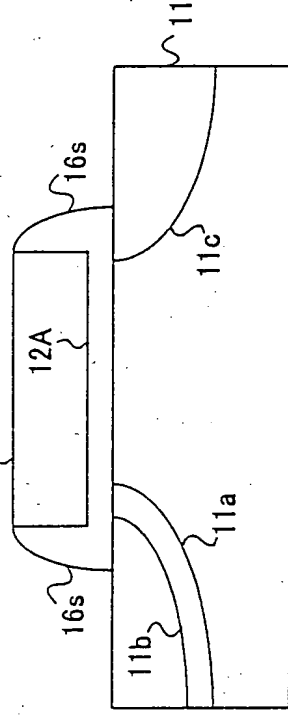


FIG. 5A
RELATED ART

Y-Y'

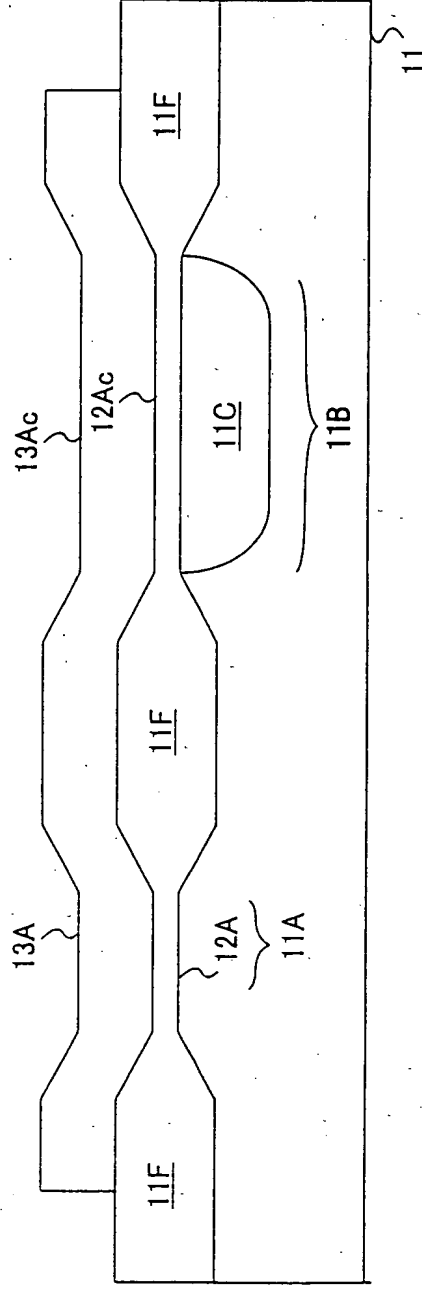


FIG. 5B
RELATED ART

FLASH MEMORY CELL A

LOW-VOLTAGE
OPERATION
TRANSISTOR B

HIGH-VOLTAGE
OPERATION
TRANSISTOR C

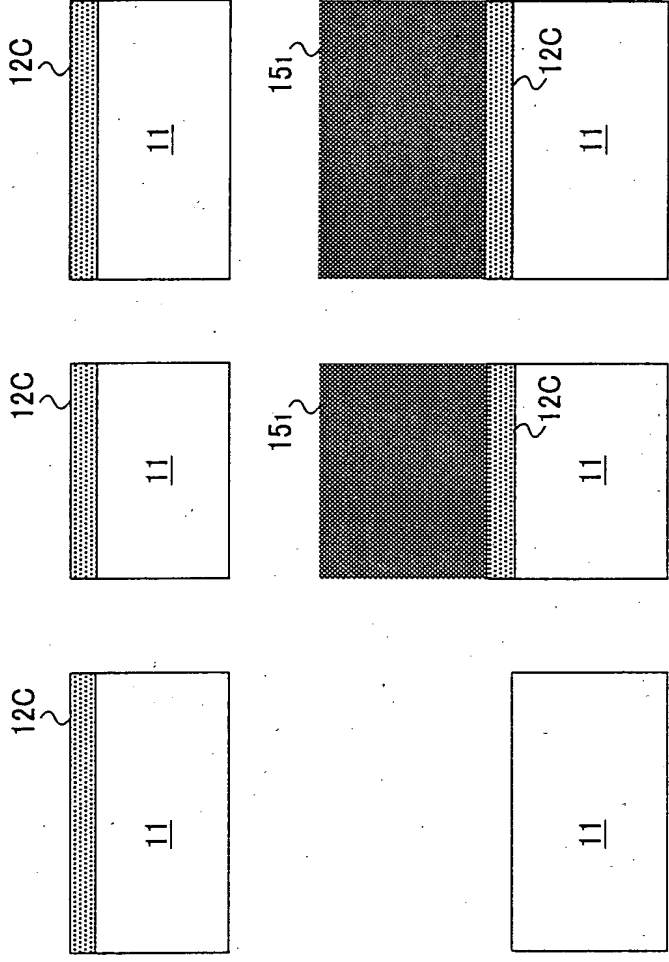


FIG. 7A
RELATED ART

FIG. 7B
RELATED ART

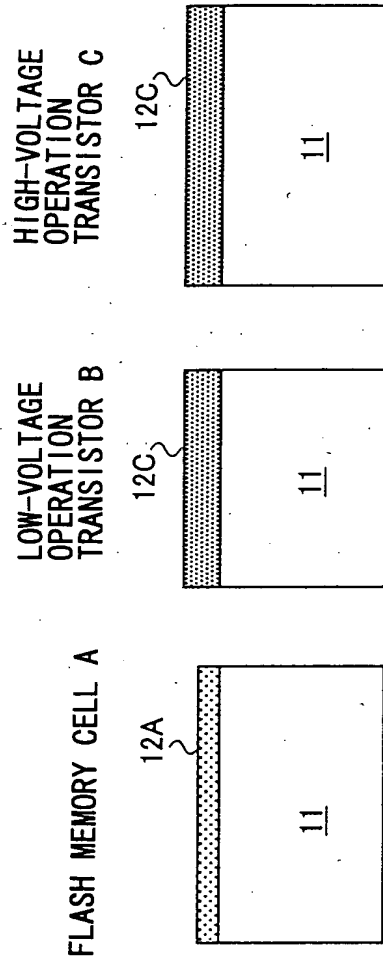


FIG. 7C
RELATED ART

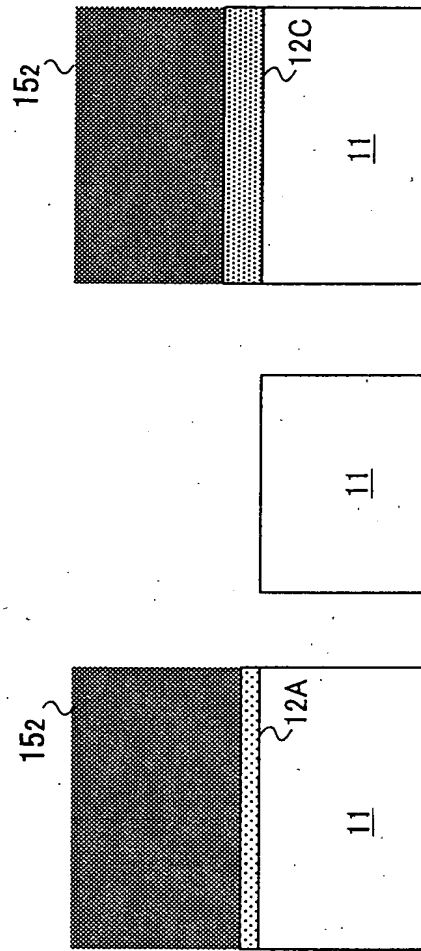


FIG. 7D
RELATED ART

FIG. 7E
RELATED ART

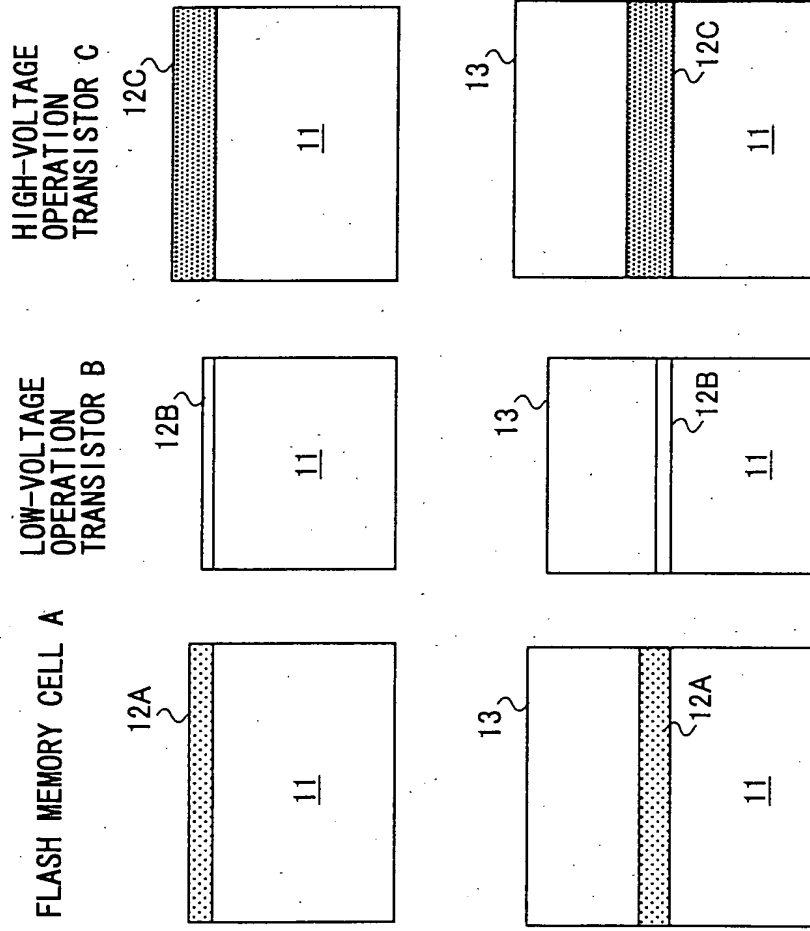
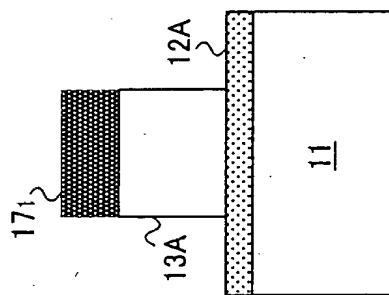


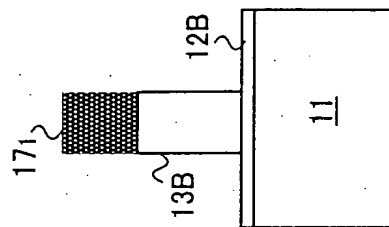
FIG. 7F
RELATED ART

FIG. 7G
RELATED ART

FLASH MEMORY CELL A



LOW-VOLTAGE OPERATION TRANSISTOR B



HIGH-VOLTAGE OPERATION TRANSISTOR C

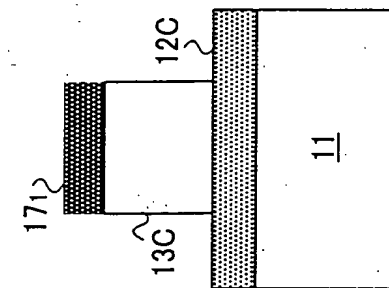


FIG. 7H
RELATED ART

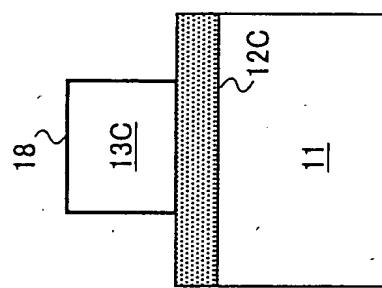
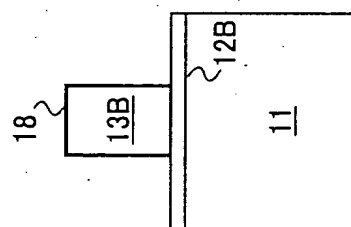
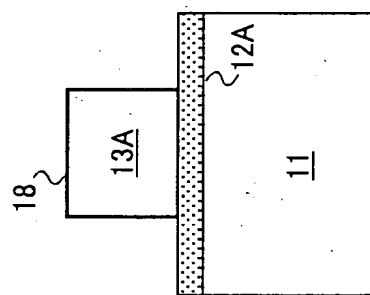


FIG. 7K
RELATED ART

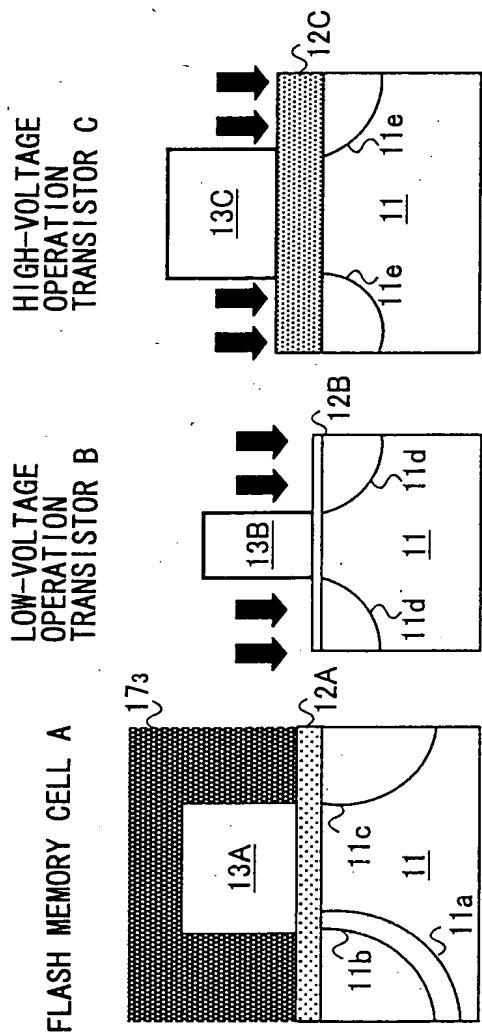


FIG. 7L
RELATED ART

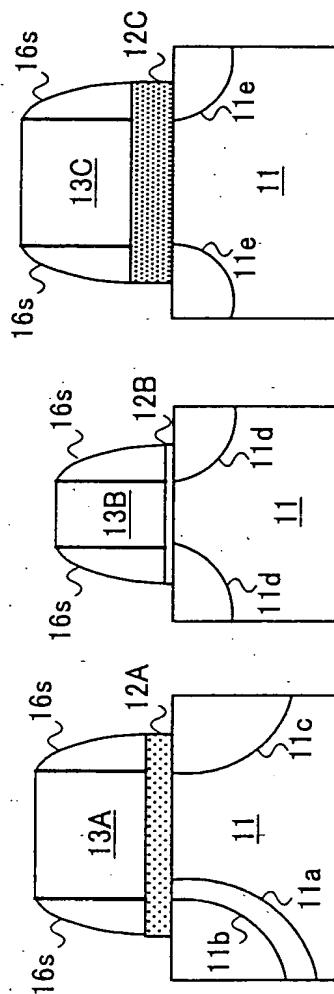
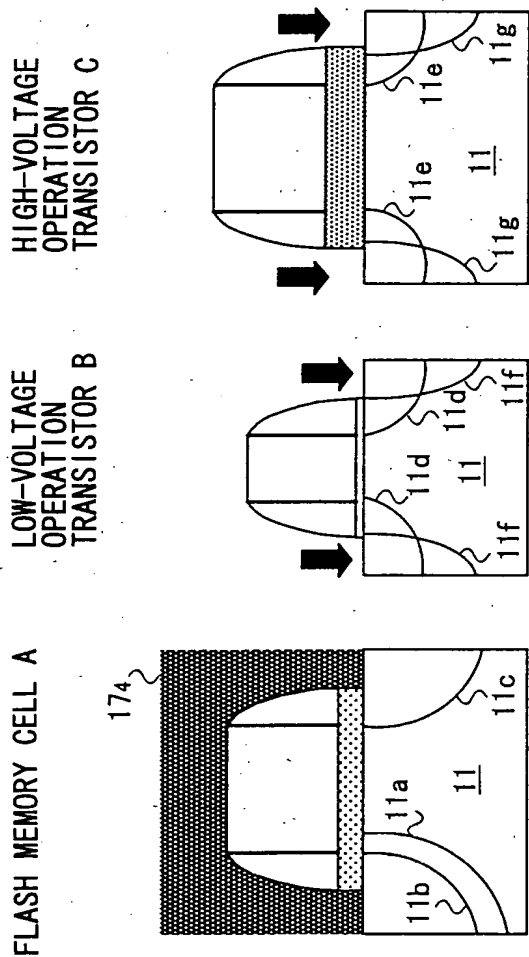


FIG. 7M
RELATED ART



LOGIC CIRCUIT DEVICES

FLASH MEMORY CELL A

LOW-VOLTAGE
OPERATION
TRANSISTOR B

HIGH-VOLTAGE
OPERATION
TRANSISTOR C

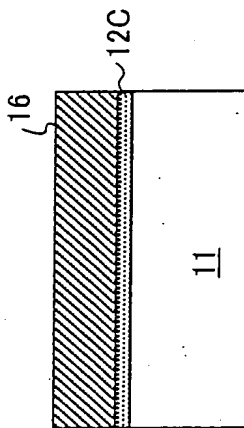
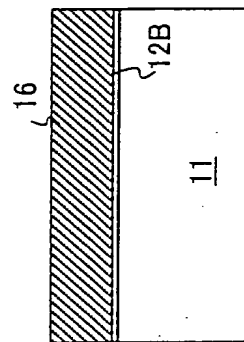
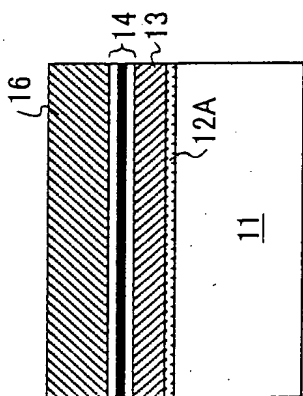


FIG. 9A

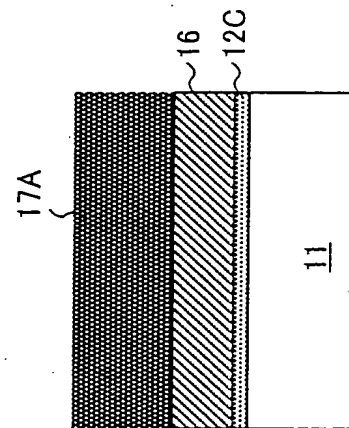
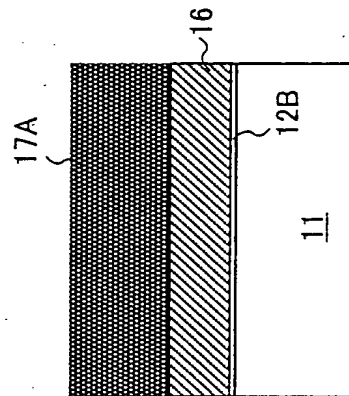
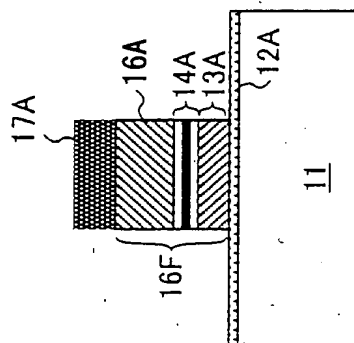


FIG. 9B

FLASH MEMORY CELL A

As+ OR P+

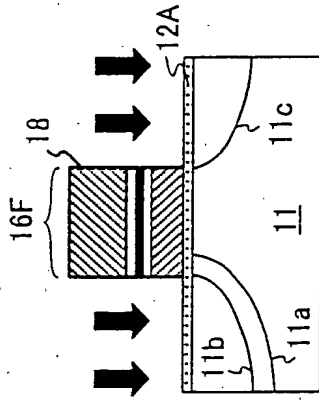
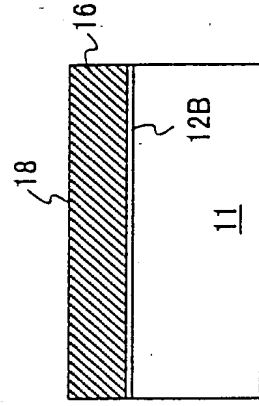


FIG. 9C

LOGIC CIRCUIT DEVICES

LOW-VOLTAGE
OPERATION
TRANSISTOR B



HIGH-VOLTAGE
OPERATION
TRANSISTOR C

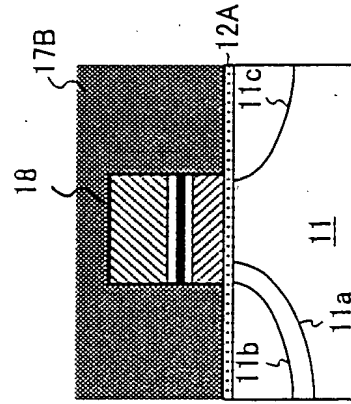
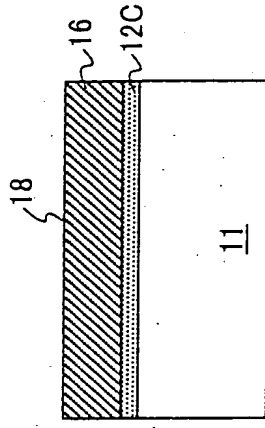
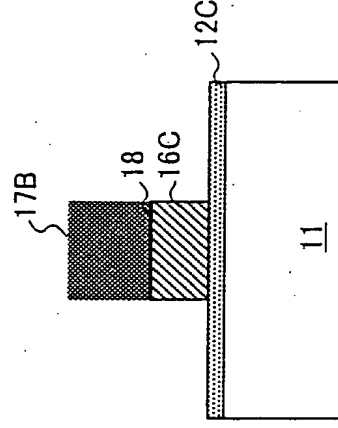
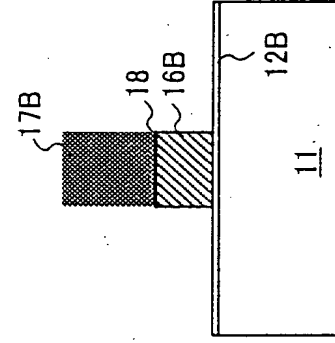


FIG. 9D



LOGIC CIRCUIT DEVICES

FLASH MEMORY CELL A

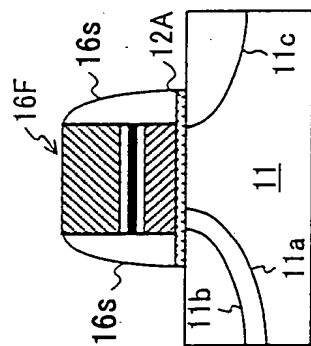
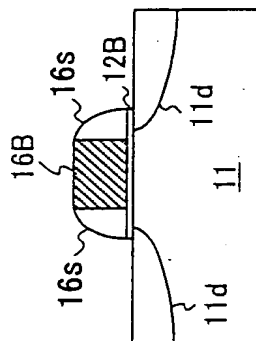
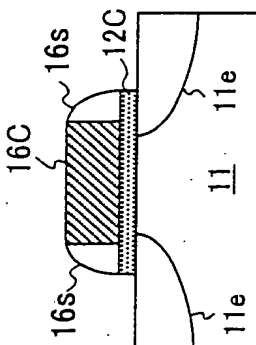


FIG. 9G

LOW-VOLTAGE
OPERATION
TRANSISTOR B



HIGH-VOLTAGE
OPERATION
TRANSISTOR C



19E

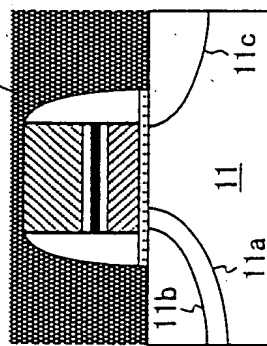
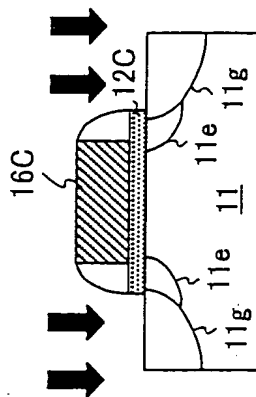
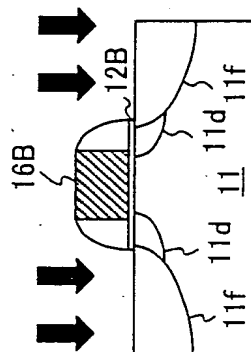


FIG. 9H



FLASH MEMORY CELL

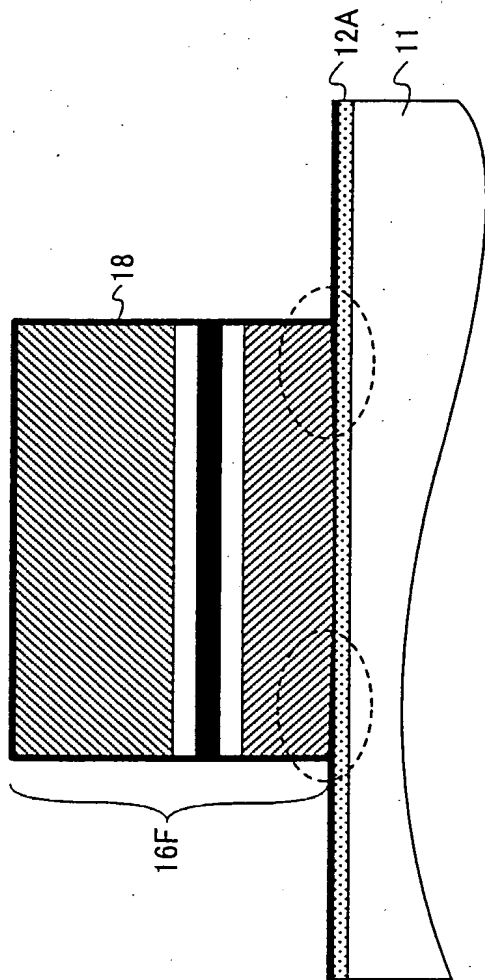


FIG. 10A

LOW-VOLTAGE OPERATION TRANSISTOR

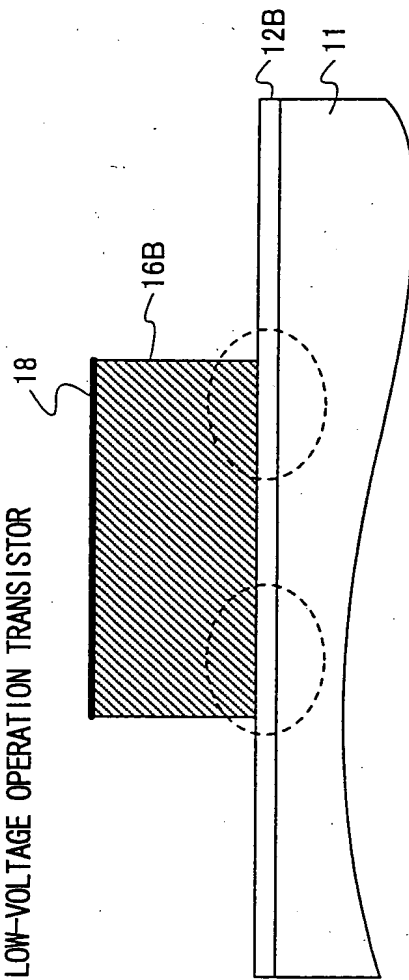


FIG. 10B

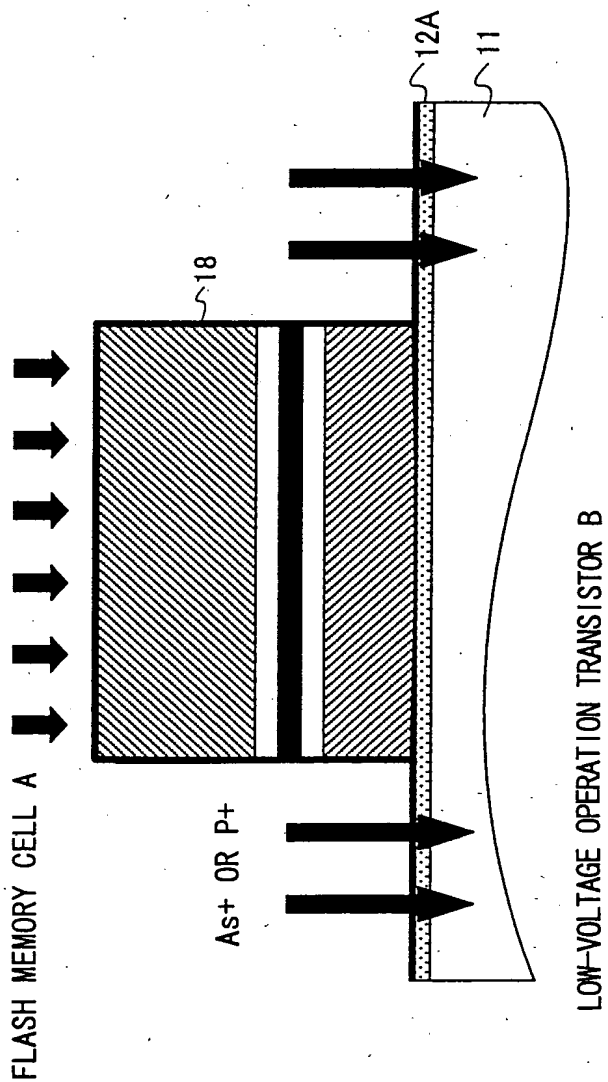


FIG. 11A

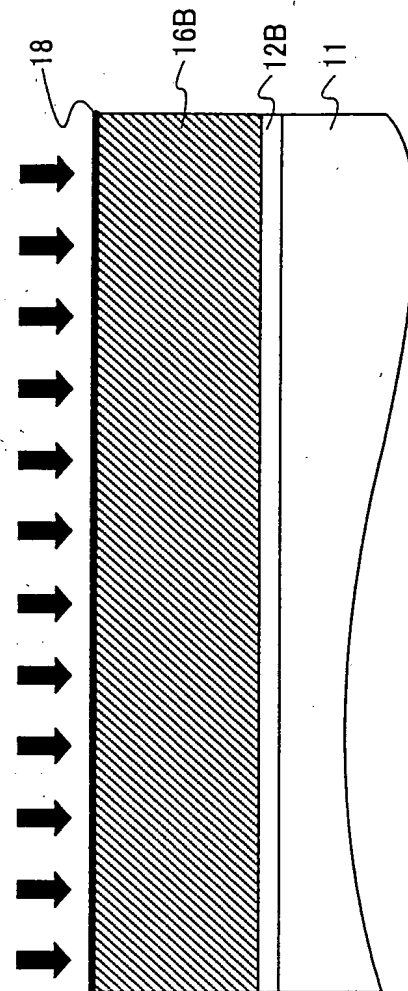


FIG. 11B

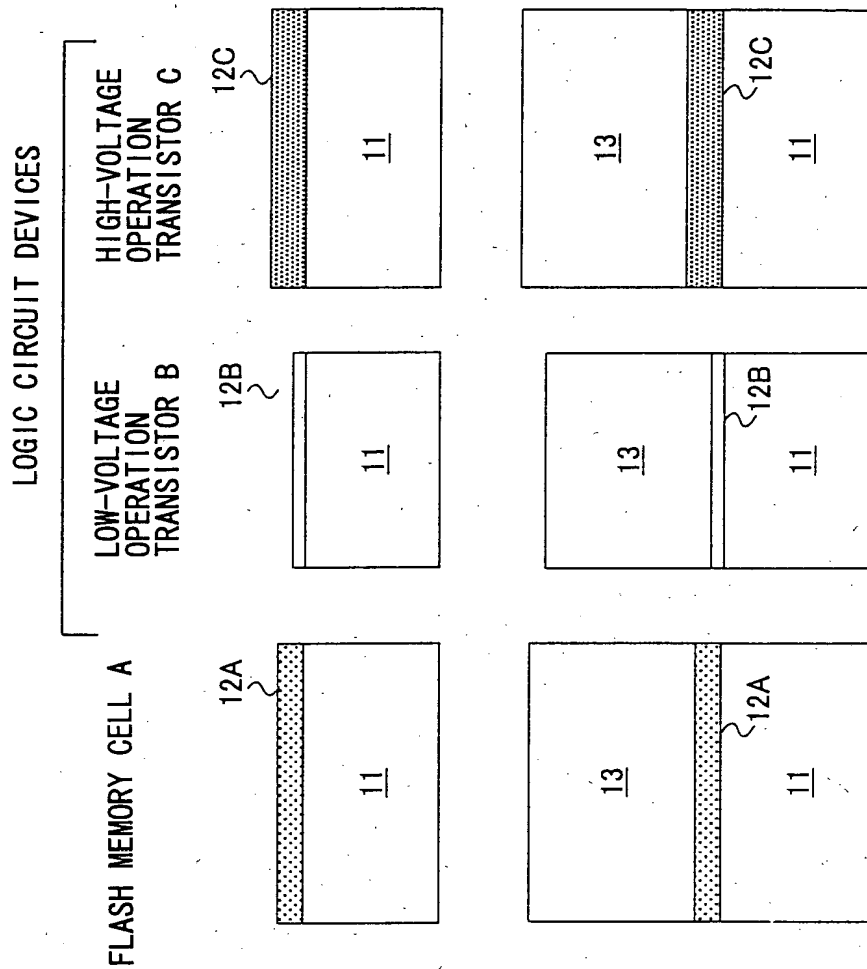


FIG. 12A

FIG. 12B

LOGIC CIRCUIT DEVICES

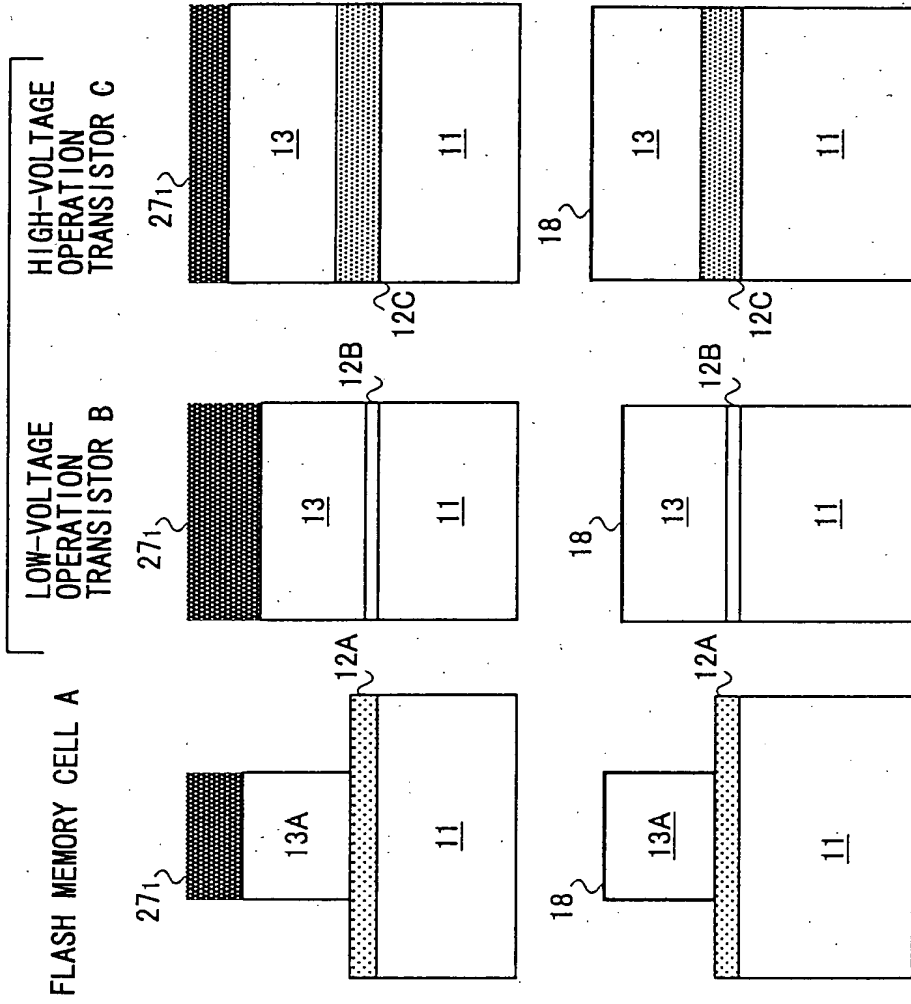


FIG. 12C

FIG. 12D

LOGIC CIRCUIT DEVICES

FLASH MEMORY CELL A
LOW-VOLTAGE OPERATION TRANSISTOR B
HIGH-VOLTAGE OPERATION TRANSISTOR C

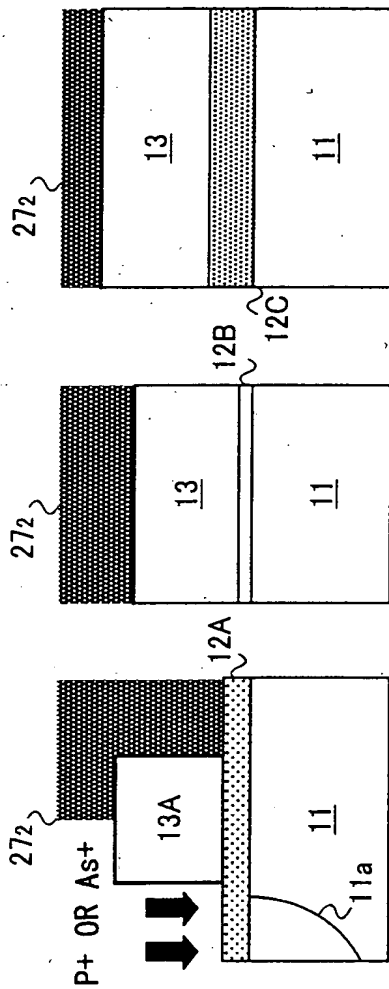


FIG. 12E

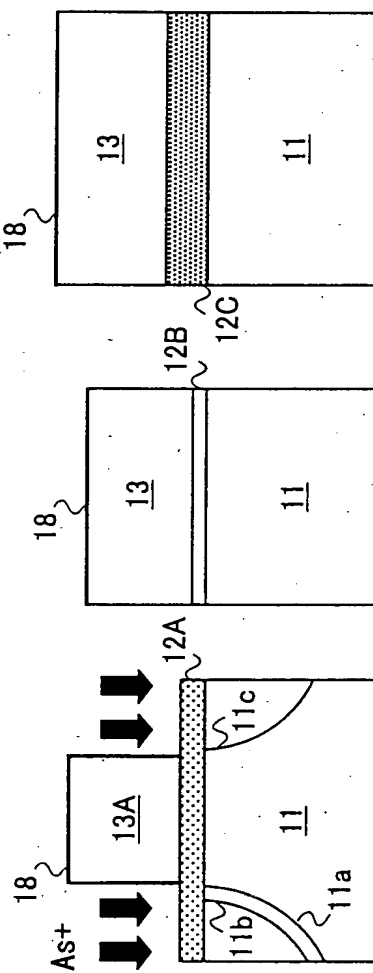


FIG. 12F

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FLASH MEMORY CELL

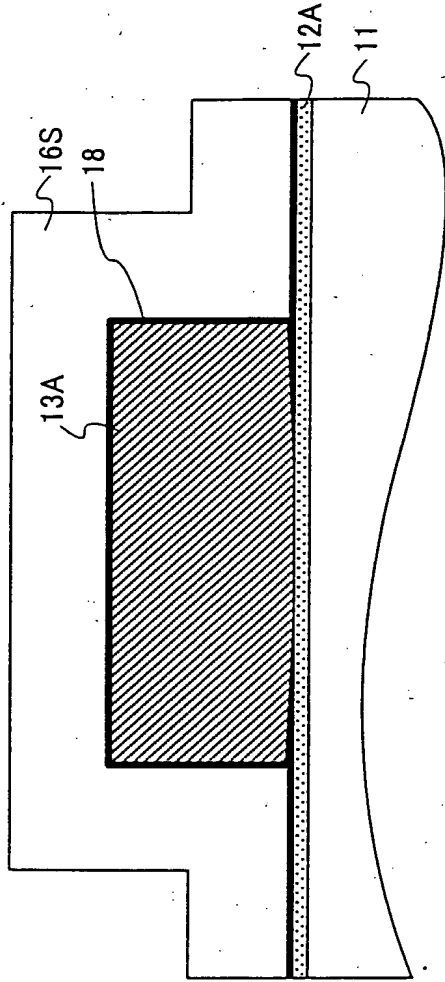


FIG. 13A

LOW-VOLTAGE OPERATION TRANSISTOR

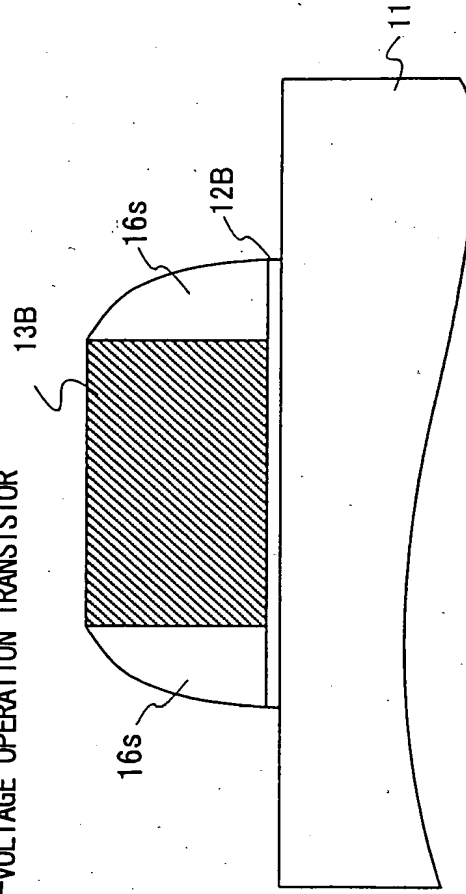


FIG. 13B